UNIT 4 MANAGEMENT OF RISK IN FINANCIAL SERVICES

Objectives

The main objectives of this unit are to:

- provide an overall understanding on the nature of risk associated with financial service companies;
- identify the sources of risk; and
- explain the process and products available in managing the risk.

Structure

4.1 INTRODUCTION

The term financial services is broadly understood to include banking, insurance, housing finance, stock broking and investment services. The services include fund-based as well as fee-based services. In fund-based services, the firm raises equity, debt and deposits and invests in securities or lends to those who are in need of capital. In fee-based services, the financial service firms enable others to raise capital from the market or exchange financial assets and risk with other participants of the market. In the US and other developed western economies, the financial services sector has grown rapidly over the post-war period and now represents a significant portion of total economic activity. In India too, during the last few years especially after the liberalisation process was initiated, the financial services sector has grown rapidly. Institutions and markets within the financial services sector play a major role in the operation of the economic system. Today, it is difficult to run the economy without this sector. You could have seen the impact of bank strikes and default of stock brokers on the economy and financial markets.

The financial sector is also known for its dynamic characteristic and within a short period, it has introduced several new products and services. Though the sector is growing rapidly all over the world, the financial markets have seen a number of bank and insurance companies failure, securities scams and market crashes. The industry is operating in an environment where the risk is very high. Thus, the success of a firm in the financial service industry to a large extent depends on the way in which it manages the risk.

4.2 TRADE IN RISK

The financial service sector offers several products and services to its customers. There are two ways in which you could look at these products and services. For example, if a bank collects money towards a fixed deposit, you may view this transaction as the bank selling a product called fixed deposit to you. If you consider the entire activity of the bank, you will realise the bank is giving you a 'financial claim' in exchange of money and acquire another 'financial claim' when it lends money to a firm. Financial claim is nothing but a promise to give a fixed amount under certain predetermined terms. Thus the main activity of the bank is buying financial claims from the borrowers and selling financial claims to the deposit holders. All financial claims in general are risky and thus bank trade in risk. Similarly, stock brokers buy and sell shares and bonds which are nothing but financial claims issued by the corporate sector and they also trade in risk. If you have an asset say building which is exposed to some amount of risk like fire, you can pass on the risk to the insurance companies. The insurance companies take risk from you and some time sell the risk to another insurance companies. They also issue financial claims to those who invest money in their equity and bonds. The case of investment companies are not much different from that of others. For example, venture capital companies take business risk when they invest money in new technologies. Mutual funds offer the benefit of eliminating or reducing the risk (unsystematic) of investment. Merchant Bankers facilitate the companies to sell financial claims to the public. In other words, risk is an integral part of the financial services industry and also the main product of the industry.

4.3 EXTERNAL AND INTERNAL RISK

The financial services industry primarily deals with financial claims. When a company deals with financial claims, there is always a chance for default which in turn affects the performance of the company. The risk in financial services industry is very high as the chances of default by those who sold financial claims are very high. The default could arise due to several reasons. We can broadly classify them into two categories for easy understanding. The default could be due to failure of the person from whom financial service company has taken the financial claim. It could also be due to changes in interest rate in the market that reduces the value of existing financial claims. As these events arise outside the company, they can be grouped under external sources. There are internal reasons that cause default in meeting the financial liability. For example, the financial services company which is in different activities may take higher risk in some activities that affect the company as a whole. There could also be mismatching in the assets and liabilities of the bank. These reasons could be grouped under internal sources. In the next section, we will list down various sources of risks for different financial services.

External Risk

As described earlier, this type of risk arises mainly on certain developments that take place outside the financial services company. As the industry offers different services, the external sources of risk also vary for different services. The following are few external sources of risk applicable to different services.

a) Institutions Providing Direct Finance

There are different types of institutions available in the financial market providing finance for various requirements. Commercial banks normally provide finance for short term needs of the firms. Term-lending institutions meet the long term funding

needs of industries which are commonly known as project financing. Housing finance companies provide funds to individuals and some times house-construction companies for acquisition of house property. Venture capital provides funds in the form of equity to new projects which involve some innovative ideas. Credit cards, factoring, forfeiting and bill discounting are other services which involve partly a service and partly a financing method. Though there are companies in the market specialising in these services, the commercial banks are also offering these services. As the nature of business is primarily lending and they borrow money from the market to offer these services, the nature of risk associated with these different ventures is common. For the purpose of convenience, all these services could be brought under the common head of banking services.

A bank may fail to honour the deposit claims of the deposit holders if the non-performing assets of the bank increased above its net worth. Though this situation is unlikely in the present Indian conditions since most of the major banks and financial institutions are owned by the government, the failure of the banks is common in the west and other countries which follow open economy and banks are not owned by the government. Even in India, there were few cases of bank failures like Bank of Karad and Bank of Thanjavore though they were subsequently merged with other banks and investors were protected. As the privatisation is order of the day in every sector of the economy and already a number of private sector banks have been established in India, the sector will be exposed to more failures if the quality of the credit is poor.

Another important external reason for the failure of these institutions in the business of lending is the quality of other assets in their total assets. These institutions often invest a part of the funds in securities either to fulfil the regulatory requirements or for investment purpose. If the investment is made in high-risk debt or equity securities, and any adverse development in the capital market or the issuing company or agency will reduce the value of the investments and in this process it may affect the bank’s ability to meet the liability. Thus evaluation of credit and investment assume importance in dealing with the external sources of risk.

b) Insurance Services

Insurance companies take the risk associated with the assets of their clients. The premium collected for this service is in turn invested either in securities or lent to outsiders who are in need of money. Thus the insurance companies deal with the external environment in two ways. An insurance company may fail to honour its obligation if the investments they have made turned poor. Similarly, the quality of assets they have insured may also turn bad such that there may be a large number of claims which exceed the expectation of the company. It should be noted that insurance companies are exposed to two common problems namely *moral hazard* and *adverse selection.* Moral hazard is the tendency of an insured to take greater risk because she/he is insured. For example, a machine owner may run the machine continuously ignoring the normal shut-down requirement, to complete an order in short time. Without insurance, the owner may not run the unit ignoring the normal shut-down requirement. Another simple example that will help you to understand this moral hazard is the customers behaviour during the warranty period. You might have noticed the tendency of the people to use the product maximum during the period of warranty.

The adverse selection is the tendency of insuring the low quality asset and not insuring high quality assets. For example, suppose the price of insurance is same for all the ships. Then owners of ships that are in poor shape will find insurance more attractive and are more likely to insure the ships than owners of sound ships. Thus, the assessment of quality of assets has become important for the insurance company to meet these sources of risk.

c) Stock Broking Services

Stock Brokers buy and sell securities on behalf of their clients. They collect the securities from the sellers and collect money from the buyer (broker) and hand over the funds to seller after deducting the brokerage for the service rendered. Though the activity looks relatively simple, the risk from external sources are very high. First, in a situation where the trades are not guaranteed by the stock exchanges or the clearing corporation, it is always possible that the failure of one broker will have chain reaction in the market place. There are several instances of this nature in the Indian stock market and often exchanges are closed to sort out this problem of default by one or group of brokers. Second, there is also a possibility that the client may fail to honour the commitment but the broker has to make good the loss.

d) Leasing and Hire Purchase

Leasing and hire purchase service is very close to the banking service. These companies also raise money from the market through deposits and other means and lend to industries. Of course, the lending is done not in the form of term loan or working capital loan, but in the form of assets. The quality of the portfolio of leased assets is crucial to their survival. Though the leasing company can technically take back the asset in the event of failure of the leasee, the resale value of the asset often is very negligible compared to the outstanding obligation. In addition to the performance of the firms to which the assets are leased, the leasing and hire purchase companies were also affected by the performance of their investment in other assets. These companies often use surplus funds, either temporarily or permanently, in securities markets. As the securities market prices are affected by so many factors, the performance of the investment in these securities has a bearing on the ability of the leasing and hire purchase companies to meet their obligations. Thus the sources of risk that affect the securities prices have become the external risk to the lease and hire purchase companies.

Leasing and hire purchase companies are also affected by the frequent changes in the regulations. The recent Reserve Bank of India regulation is expected to wipe out many of these companies from the market as RBI has put rigid norms in raising deposits from the public. Further, the performance of these companies also depends on their ability to attract deposits since the operation of these companies will be viable only when they operate with high leverage. For instance, a lease or hire-purchase company can sustain their financial viability only when they are able to achieve a debt-equity ratio of 4 or above. The market for deposits has become competitive especially when banks started offering interest rates close to the lease and hire purchase companies and the moment the funds stop flowing the operations of the company will be affected. This applies even to companies which are performing well and the quality of lease portfolio is good. The continuous flow of deposit is essential because these companies operate with a mismatch of assets and liabilities under the assumption that subsequent deposits will take care of this mismatch. An example will be useful to understand this concept.

Example 1

Suppose, you have deposited Rs. 1 lakh for two years under the public deposit scheme of lease and hire purchase company. The company in all probability will lease an asset worth of Rs. 1 lakh to a company and following the general practice of the industry, the lease period may be for 60 months (5 years) or 36 months (3 years). How would the company repay your deposits at the end of second year? The time mismatch of the asset (lease asset) and liability (deposit raised from you) poses a serious problem to the company. Though the company could create a lease asset only for two year period to avoid the mismatch, the market for lease asset may not exist to

match the period of liability. The company still carry on the business with the mismatch, expecting some one will come at the end of second year with a deposit of Rs. 1 lakh so that it could repay your debt. Though this example is made very simple and in the real world so many other factors are taken into account in the asset-liability management, you could have appreciated the need for continuous flow of deposits for the existence of the lease and hire purchase companies.

e) **Institutions Offering Fee Based Services**

Merchant banking, mutual funds, credit rating, debt securitization, merger and acquisition and corporate restructuring are few examples of fee based services offered by the financial services companies. The absence of direct involvement in funding considerably reduces their risk of operations. The performance of these companies depends on the quality of the services offered by them and as such internal factors play more role. As far as external sources of risk is concerned, the regulatory changes is a common source of risk to all these services. For example, there were major changes in the regulation of merchant banking and mutual funds which will effectively reduce the number of players in their respective industry. The quality of credit rating service is heavily questioned during the period of East-Asian crisis as the credit rating companies have failed to forewarn the users of credit rating. In India too, the credit rating services were criticised when the CRB Capital had failed to honour the commitments to its deposit holders. There were number of factors external to the firms in East-Asia and CRB Capital causing their failure which in turn cast doubt on the credit rating services. Debt securitization service is yet to develop as a major service in India. The performance of debt-obligations being securitized and different laws relating to stamp duty in force in different states are potential source of external risk to the operations of a company offering debt securitization service.

Activity 1

a) How do you describe the business of credit card services ?

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b) Name a few financial services firms that provide funds to various requirements of the corporate sector.

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c) In the context of ‘moral hazard’ and ‘adverse selection’ that affect insurance companies, how will you evaluate the insurance proposals?

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d) Why does the Reserve Bank of India made the rules governing acceptance of public deposits by NBFC strict?

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e) Could you sight a few reasons for the poor performance of mutual funds industry in India?

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Internal Risk

Companies providing Financial services often fail due to their own mistakes. For example, Barring Securities failure could have been averted, had the company followed robust internal control system. There are several other internal factors that contribute to the failure of the firms in the financial services industry. Some of these internal sources of risk for different financial services companies are discussed below:

a) Institutions Providing Direct Finance

Banks, term lending institutions and other companies providing direct finance are exposed to several internal sources of risk. First and foremost among them is the quality of evaluation of the loan proposals. Often, the appraising officers fail to consider vital issues that affect the outcome of the project. This requires a good system of appraisal and introduction of modern project appraisal techniques. The performance of these companies are also affected due to over-exposure in a particular industry or in a group. When the industry or group fails or is affected, a significant part of the total loan portfolio turns bad and thus affects the performance. They are also affected by the asset-liability mismatch and excessive dealings in the security market. Many banks performance was affected during the securities scam period of 1992 due to excessive trading in government and public sector securities.

Another important source of internal risk is the policy of the institution in using derivatives in managing their risk. For example, during the course of normal foreign exchange business activities, banks enter sell forward contracts in foreign currency. They may also buy and sell foreign exchange as a part of their treasury activities. But at the end of the day, if there is any outstanding position, the bank is taking risk to that extent in the foreign exchange transaction. If the bank fails to use the derivative products in hedging the risk, its performance may be affected if the market moves against the position the bank is holding. This again requires clear policy and control system to check the effective implementation of the policy.

b) Insurance Services

As in the case of financial services companies which are in the business of direct lending, insurance companies are also affected by the efficiency in assessing the insurance proposal. We have already mentioned the problems of moral hazard and adverse selection when discussing external sources of risk relating to insurance services. Unless, the internal system of evaluating the insurance proposal is efficient, the company will end up in insuring bad assets. The performance of insurance companies is also affected by over-exposure in a particular type of asset or large exposure in a single proposal. Often, insurance companies limit their exposure on different classes of assets and proposals and if the limit exceeds, they reinsure the assets with some bigger insurance companies to share or pass on the risk. Another important internal factor is the assessment of liability and allocation of funds in different investments taking into account the expected liability. The performance of the company on the investment side depends on its efficiency of treasury and investment division which needs to consider the different sources of investment risk in managing the investment portfolio.

c) Stock Broking Service

Though the stock broking is a fee based service, there are many sources of risk attributable to internal factors. Stock broking activity typically involves receipt of the order from the clients, execution of the order in the exchange, receipt of documents or cash from the clients and delivery of cash or documents to the clients. Since many investors are holding the stocks in physical form compared to the dematerialised form of holding popular in the west, stock brokers have to face many problems in dealing with the physical form of securities. There are many fake documents in the market and often brokers receive the documents either from their clients or from other brokers when they buy the stocks for their clients. Though these will be ultimately rectified and made good, the process takes long time and in the meanwhile the broker has to maintain the margin with the exchange. If the fake documents are given by the brokers own clients, they have to be contacted for replacement of the documents. If there is any problem in tracing the client, then the liability is on the brokers and the broker has to buy the document from the open market and deliver it to the buyer-broker.

Even if the stocks delivered are good and genuine, there is no guarantee that they are good for delivery. Often, investors commit mistake in completing the documents and sign wrongly in order to avail certain benefits like bonus, rights or dividends. When these documents are returned to the broker for correction, the exchanges will debit the brokers to the extent of benefit not received by the buyers and brokers are expected to collect the debit amount from the customer. An example will be useful to understand the problem associated with this type of bad delivery.

Example 2

Suppose you bought Hindustan Lever stocks within a few days from the date of declaration of dividend by the company. At the time of your buying, the stock is quoted on cum-basis. If you have received a good document and sent the same for registration, you could have received a dividend of Rs.1000. But the seller has signed the transfer deed wrongly and when you have sent it for delivery, it is returned to you by the share-transfer agent. In this process, you might miss the dividend and dividend will be paid to the seller whose name still appears in the balance sheet. When you return the document to your broker, your broker will debit the account of seller broker and deliver the document for replacement. In the normal course, the seller broker will get the fresh signature from the seller and also the dividend amount and hand over the share certificate and dividend amount which in turn will reach you. If the seller broker is not able to trace the seller, the broker is still liable to your broker for replacing the old document with a fresh document and also for the dividend amount. Some investors after selling the shares lodge the complaint with the company for the loss of share certificates and take duplicate certificates after completing the necessary legal formalities and then sell the duplicate certificates also through another broker. The brokers are thus exposed to huge amount of risk and this kind of problems in a few hundred shares of Hindustan Lever or ITC is good enough to cost heavy cash outflow to the brokers.

Similarly, when the orders are executed for the clients, the brokers have to rely upon some of their trading assistants who enter the orders. Any wrong entry of orders either on the numbers or nature of orders will result in non-acceptance by their clients and the brokers have to bear such losses. Another important problem area is on margin accounting. Since all the exchanges in India follows periodic settlement system, brokers have to keep a close vigil on the margins maintained by their clients. Further many stocks which are actively traded in the market move with high volatility, and thus the initial margin collected may not be adequate to meet the commitment. In a condition where the speculative investors are active in the market, speculators who

incur heavy loss after the trade is completed but before the settlement date due to sudden change in the price of the stock may fail to honour their commitments.

Many Indian stock brokers have also trade on their own account and their proximity with the trading system does not guarantee profit. On several occasions, many big brokers have incurred huge losses on their trading and wiped out from the business. If the brokers fail because of their own account, then all trades that are conducted by them as a broker are also affected. When a broker fails, it affects several others in the exchange who have traded with the brokers since the concept of trade guarantee by the clearing corporation is yet to take its full shape in India and trade guarantee fund is often too small to meet such liabilities.

d) **Leasing and Hire Purchase**

The business of leasing and hire purchase is highly competitive with too many players in the market. Corporate and high net worth firms prefer lending institutions for their funds requirement since the cost of leasing and hire purchase are relatively high. The cost of these sources of funding is high mainly their high cost borrowing and low level of leverage. When banks and term lending institutions operate with a debt-equity ratio of 10:1 and above, many leasing and hire purchase companies are finding it difficult to reach a debt-equity ratio of 4:1. Often these companies rely on the banking system for funds. Thus they operate in a sector which is essentially discarded by the banks and financial institutions and in certain specific areas where corporate sector and high net worth firms find leasing as more beneficial. The leasing and hire purchase activities are today restricted to heavy vehicles, automobiles, computers, consumer durable and items which are eligible for 100% depreciation. The equipment leasing though exists, is not a major activity in India.

As the industry operates in a high risk segment, the quality of assessment of lease proposals assumes importance. This is a difficult task for two reasons. First the credit information system in India is relatively weak and published accounts are not reliable to assess the credit worthiness of the borrowers. Second, the competition in the industry allows short time to take decision on sanctioning the proposals; otherwise, the competitors will take away your client. In such an environment, it is tough task in assessing the proposals and unless the quality of assessment is of high order, it affects the cash flows.

Another internal problem is on the asset-liability mismatching which was briefly discussed earlier. Compared to the banking and term lending institutions, this mismatching is a serious problem to these companies. Again the competition in the industry aggravate the problem. The competition in the industry forces the lease and hire purchase companies to either follow the industry norms or be liberal further in deciding the terms of lease and hire purchase. Again on the fund raising side, they have to face the competition, and adopt the industry norm. This often leads to mismatching of the assets and liabilities in terms of time. Many lease and hire purchase companies are not aware of this problem and the problem accumulates over a period and suddenly affects them in the form cash-out position. Thus, it requires more systematic analysis of assets and liabilities of the organisation.

Many of the lease and hire purchase companies are also in the business of bill discounting, lending in the inter-corporate loan market and investing in securities like commercial paper and other short term securities. Since the nature of risk involved in each one is different from others, the company should develop appropriate risk assessment system to know the overall risk of the company. Often, you will come across a lease and hire purchase company performing very well in its core business but suddenly failed due to huge loss in other investments. The default by many big companies in 1996-97 in the inter-corporate loan market had affected the performance of leading lease and hire purchase companies.

e) **Institutions Offering Fee Based Services**

Institutions offering specialised services are exposed to several internal risks. For example, the performance of mutual funds directly depends on the ability of the fund managers in reading the market and making investment accordingly. They are expected to preserve the information generated internally and use exclusively for the benefit of the funds. On the other hand, if they freely use the information to their own benefit, it hurts the performance of the funds. In addition, the efficiency of the fund managers in assessing the market is also important in this context. For credit rating services, in addition the quality of analysts in assessing the credit worthiness of the firms, the analysts professional conduct assumes importance.

Merchant bankers handling the capital offerings have to comply various requirements of the SEBI. In fact, the certification of the merchant banker called '*due diligence certificate'* is the basis for the regulator allowing the public and right issue to raise money from the market. SEBI expects the merchant bankers to study all aspects of the public issue and ensure the compliance of all relevant regulations and complete disclosure of information to the public. Any failure on the part of the merchant banker will attract punishment that includes suspension or cancellation of registration.

Activity 2

a) Banks are expected to invest in Government securities to fulfil SLR requirement. How does investment in Government securities increase the risk of banking operations?

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b) How does the physical form of delivery increases the risk of stock broking business?

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c) What are the major problems faced by the leasing companies in evaluating the loan proposals?

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d) Suppose, an issue handled by a merchant bank turns out to be a bad investment in the future because the project undertaken failed to achieve the desired output. Is the merchant banker liable for bringing risky problem to the market?

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4.4 TYPES OF RISK

In the previous section, the different sources of risk for various financial services firms have been discussed. They could now be broadly classified under the following six heads:

1) **Credit Risk**

Many of the financial services firms like banking, credit cards, lease and hire-purchase are involved in fund based business. The credit risk affects the fund based activities of the financial services. This risk arises in evaluating the proposals for lending. While credit rating, either by credit rating institutions or internally, helps to quantify the risk, the percentage of non-performing assets measures the impact of credit risk on the firms. Many financial institutions started using new models to measure credit risk. Models such as KMV (distance to default) and Credit Metrics are widely used.

2) **Asset-Liability Gap Risk**

This risk also applies to firms doing fund based services. Since funds raised from external sources play a major role in the fund based activities, the duration of the liability is an important variable which needs to be considered while lending. For example, if a firm gives a five year loan against a deposit for two years, there is a mismatch between the liability (funds received) and asset (funds lent). If this mismatch exceeds a predetermined level, it may lead to a cash out situation.

3) **Due-Diligence Risk**

Merchant banking companies and other financial services firms which are offering fee based services like merger and acquisition have to exercise due diligence in their operations. This due diligence may have to be provided to the regulatory agencies or to their client. For example, the SEBI regulation on Merchant Banking requires the lead manager to provide a due-diligence certificate in the prescribed form before the public or rights issue opens for subscription. In the event of any lapse or mistake noticed in the due diligence subsequently, it will affect the financial services firm which has provided the due-diligence certificate in different ways. While in some cases, the financial services firm may be required to pay compensation for the loss incurred, it may also lead to suspension or cancellation of registration.

4) **Interest Rate Risk**

This risk affects the firms which are in fund based activities. The interest rate risk arises when there are frequent changes in the interest rates in the market. Though, we had a fairly stable interest rate regime prior to economic and financial sector reforms, the interest rates are volatile in the last five years. The financial services industry are exposed to interest rate risk in their (a) treasury operations, (b) lending and (c) resource mobilisation. As the market value of the fixed income securities has an inverse relationship with the market interest rates, the market value of current holding will decline when the interest rate in the market increases. Though it may not result in immediate loss unless the securities are sold, accounting prudence and regulatory requirements call for provision, for such losses. Similarly, the loan portfolio of banking and leasing companies is affected when the market interest rate increases when there is no clause for revision of interest rates. Often, the banking and leasing companies revise the interest rates for the existing deposit holders also when there is a steep increase in the interest rates (other wise, the deposit holders will opt for premature withdrawals and then reinvest the money to receive the revised interest rate) but they may not be in a position to make similar adjustment in the interest rates on their loan portfolio unless the loan agreement contains a provision for revising the interest rates. This increased cost will have an impact on the profitability.

The variation in the interest rates also affects the financial services companies through their resource mobilisation. Often, banks and other financial services companies are forced to pay higher interest rates which were committed earlier even

though the market rates have come down. As the cost of funds relative to the market interest rate is higher, it affects the profitability of the institutions. It may be useful to recollect the problem faced by a premier financial institution in this area some time back. The financial institution had come out with different debt issues offering 14% to 16% for different types of debt instruments. But by the time the issue date is completed, RBI has reduced the bank rate and that had an impact on the deposit rate and prime lending rate (PLR) in the market. The rates have fallen and the debt offering of the financial institution was very attractive to the investors. The issue had attracted good response but the cost of funds to the financial institution was very high. Since such changes in the market interest rate is difficult to forecast, the financial services firms which are mobilising resources have to face and manage the interest rate risk.

5) **Market Risk**

Financial services firms which are in the investment business or investing a part of the funds in securities are exposed to the market risk. This risk arises on account of changes in the economy and all securities are affected. Though firms can develop efficient portfolio through diversification process, it could help them to reduce the unsystematic risk. The market risk otherwise known as systematic risk cannot be eliminated. There are several measures of market risk. Recently, many financial institutions use value at risk (VaR) measure to understand the amount that the firm would loose if there is a major change in the market factor at a predetermined probability level. The top management of the financial institutions may say that it doesn't want to expose more than 6% of the total capital to risk if there is a major change in the market factor. In other words, the management wants to ensure that there is 99% probability that the loss doesn't exceed more than 6% of capital in the event of major change in the market factor. If it does happens, then efforts are made to reduce the risk. It may be possible to reduce the systematic risk through derivative products but the firm has to incur a cost to get this benefit. In the absence of such derivative products in India at this moment, all firms which are holding investments are exposed to the market risk. While investment companies, mutual funds and others offering portfolio management services are affected most by this source of risk, the impact of this risk is limited to other financial services firms. You would appreciate the importance of this risk if you look into the current status of mutual funds and companies offering mutual funds in India. All these firms were doing well prior to 1992 but after the securities scam, all of them have lost investors confidence.

6) **Currency Risk**

Firms which are dealing in foreign exchange currencies are exposed to this source of risk. Banks, financial institutions and money changers are few financial services firms which are normally affected by this source of risk. This risk arises because of changes in the currency values which in turn was determined by the fundamental economic strength of the two countries and short-run demand and supply gap. These firms are affected by currency risk when they hold currencies or liabilities in the form of either forward contract or interest/principal payment. When the Rupee depreciates, it affects those who are holding foreign currency liabilities and when the Rupee appreciates, it affects those who are holding foreign currency. Other financial services are also affected from this source of risk if they have borrowed money in the international capital markets or raised foreign currency loan. As and when derivatives in foreign currency transactions are allowed, firms which take position in derivative markets will also be affected from this source of risk.

Activity 3

a) How does the interest rate change affect the floating rate notes?

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b) When Rupee depreciates, how will it affect the banks?

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4.5 MANAGEMENT OF RISK

It may not be feasible to start any venture without taking risk. Risk is an integral part of any business and the reward or profit is directly proportional to the risk undertaken. In the case of financial services industry, the firms deal with financial claims which are by nature risk products. Many financial services firms voluntarily create products that transfer risk from others to itself in order to earn a return. An example would be useful to understand this concept. Suppose a firm has payment obligation to an overseas supplier and a sum of $100,000 is to be paid at the end of 3 months from to-day. The firm is now exposed to currency risk. A financial services company may be willing to enter into a forward contract with the firm so that the firm can transfer the currency risk to the financial services company. The product that has been traded is currency risk and the financial service company is doing this transaction mainly to earn forward cover premium. Having taken the currency risk from the firm, the financial services company cannot remain silent. It has to now manage the risk in order to avoid the negative impact of the transaction. Financial services companies assume such risks under the assumption that they are capable of managing the risk much better than others like the firm which was earlier exposed to currency risk. In fact, the success of the financial services firms depends on their ability to identify the risk associated with different financial and trade dealings in the market, devise a product to transfer the risk and develop a strategy to manage the risk. All the three factors are equally important. In the previous sections, we have discussed sources of risk that applies to different types of financial services firms and grouped them under six broad headings namely, credit risk, asset-liability risk, due-diligence risk, interest rate risk, market risk and currency risk. We will now discuss different strategies available to manage these risks in this section.

1) **Managing Credit Risk**

The first step in the process of managing credit risk is the quantification of credit risk the firm is exposed to. The quantification is done through credit rating. You have several options in quantifying the credit risk. You can rely on rating assigned by the external rating agencies on the borrower or commission the services of the external rating agencies to do the rating for you. Though we have three rating agencies at present which are primarily rating major borrowers in the market, it is expected that new rating agencies will emerge in the market especially to rate medium and small scale companies and individuals. You can also have an in-house credit appraisal or rating division to rate the credit worthiness of the borrower. For example, public sector banks assign health codes to the loan accounts. While credit rating helps the banks and other lenders to assess the credit worthiness of the borrowers, it may not be possible for the lenders to be selective in sanctioning the loans only to the high quality borrowers. While on the one hand, this strategy will limit the proposals that

come to the firm, on the other hand, the income will also be lower as interest rate and credit rating of the borrowers are inversely related. The firm can adopt the following strategy in managing the credit risk. The steps involved in this strategy are:

Desirable Loan Portfolio: The starting point could be to develop a desirable loan mix which consists of different categories of the borrowers. If you want to be a aggressive lender in the market, you can allocate more funds to lower credit rating borrowers. On the other hand, if you want to be conservative, then allocate minimum funds to lower credit rating borrowers and maximum funds to higher credit rating borrowers. Aggressiveness need not always result in loss. For example, you can allocate more funds to lower credit rating borrowers but you can screen the borrower carefully and the quality of assets available as security in order to select the best from this group.

Continuous Monitoring: This is more important in managing the credit irrespective of the policy the firm has adopted while sanctioning the loans. In other words, it is important even if the lender was conservative in sanctioning the loans and restrict the loans only to borrowers whose ratings are high. There are several cases where the credit rating has gone down significantly and you will regularly see such reports in the news papers. After the south-east Asian crisis and the default of few non-banking finance companies in India, the Indian rating agencies are closely monitoring the ratings assigned and revise them frequently. This continuous monitoring requires flow of information from the borrowers and also from the market and the firm has to develop necessary mechanism to collect such information from the borrowers and the market intelligence system. Since the performance of the borrowers deteriorate over a period, the monitoring system in force should give early warning and thus assumes a crucial role in the credit risk management. This monitoring system could be a simple subjective assessment of the information collected from the borrowers and market or it could be a sophisticated econometric or statistical model.

Action on Doubtful and Bad Debts: The moment the monitoring system raises some doubts about the loan account, action need to be initiated to recover the loans. First thing that needs to be done is to check the assets, movable or immovable, that are given as a security to avail the loan. If the asset value is found to be inadequate, then demand is to be made for additional security. Along with this process, it is also useful to offer a good discount to motivate the borrowers to prepay the loan. If there are specialised agencies dealing with the recovery of doubtful and bad loans, the lender could discount such loan accounts with them to collect back at least the principal. If the debt has become bad, there is no question of managing the credit risk but it requires certain administrative actions like taking possession of the assets provided as security or filing claims with the official liquidator.

2) **Managing Asset-Liability Gap Risk**

Since this is relatively a new concept though we have briefly discussed in the earlier sections, it requires elaborate discussion. First, let us consider the situation where this problem of asset-liability risk is least. Assume we are in a stable interest rate regime. Now consider the balance sheet of a financial services company which has some fund based services like, banking, leasing, etc. You will notice that the assets and liabilities are equal since these two shall be equal under double-entry booking system. Now position yourself as finance manager of the company and check what is your role to maximise the return. You will see that assets of your company will bring income and you have to reward the liabilities. The spread between the two is the net income to the company. Thus your focus will be normally restricted to *spread management*. While you are concentrating on the spread management, the credit manager and deposit manager concentrate on their respective functions namely bringing and assessing new credit proposals (asset management) and deposit

mobilisation (liability management). The business runs well if each one of you achieve higher results and the need for co-ordination is not felt in a stable interest rate regime. But the moment you relax this condition of stable interest rate regime, you require a co-ordinated approach in managing all the three key variables namely asset, liability and spread. Such a co-ordinated approach is known as Asset-Liability Management (ALM). Since interest rates are already started moving freely in the market, the ALM is one of the key issues of discussion today for several banks and other financial services companies.

The basic problem in ALM is the difficulty in repricing the assets due to reputation, customer relationship and market conditions. The problem is aggravated due to repricing of liabilities before the assets. For instance, on the basis of 14%, 3-year deposit, a leasing company may have contracted 7 year lease at an effective rate of 18%. The spread of 4% is good in the normal condition. Suppose the deposit interest rate now moves up to 17%. This revision in the deposit rate could be due to general increase in the deposit rates in the market or downgrade in the credit rating of the leasing company or both. The depositor who has initially invested money at 14% for three years will now demand higher interest rate or prefer preclosure of the deposit. Though the leasing company could reject the preclosure request, in the interest of long-term relationship with the customers, it has to either refund the deposit or revise the interest rate to 17%. As floating rate notes and deposits or deposits with call and put options will soon come to the market, a substantial part of the liabilities would automatically be repriced.

The actual management of assets and liabilities focuses on controlling '*gap*' between the Rate Sensitive Assets (RSA) and Rate Sensitive Liabilities (RSL). The rate sensitive instrument is one which can mature or priced, upward or downward when the market interest rates are changed. The four key building blocks of ALM are : (1) measurement of gap i.e. determining the amount of assets and liabilities being repriced, (2) estimating the rates at which the repricing takes place, (3) Projecting future income, and (4) testing different strategies.

Gap Management: The first job in the ALM is to measure gap. There are two ways in which the gap can be measured. If the gap is measured at a macro level, it has limited use. It gives an idea about the level of risk involved in the firm. The second method which is useful in ALM is to get a detailed break up of 'Gap'. First all the assets and liabilities are to be broken down and grouped as per the maturity schedule. Then each group should be further classified into RSA/RSL and non-RSA/non-RSL. After taking into consideration the interest liability, the gap on each group is to be measured. This is something akin to a detailed cash budget.

Illustration 1

In Table 1 to Table 4 given at the end of this material, the assets and liabilities of a financial services firm are given under different format to understand the gap measurement concept. In Table 1, the assets and liabilities are given in a consolidated format and the user can only learn the total assets and liabilities of the firm from this table. In Table-2, the duration of the assets and liabilities are given and from this it is possible to know the short term and long term assets and liabilities of the firm. From this Table, you could see gap of Rs.100 since the firm has created a long-term assets worth of Rs.600 against a long-term funds of Rs.500 (Rs.100 from owned funds and Rs.400 from long-term funds). In Table 3, the details of short and long term loans are given. The firm has both fixed interest and floating interest assets and liabilities. You will notice another gap in the form of long-term floating rate funds being used to create long term fixed loan. In Table-4, the interest rates of assets and liabilities with the duration are given. This table will help you to identify the mismatch more in terms of interest rate and duration in addition to value mismatch.

Interest Rate Forecasting: The gap has to be necessarily closed or managed. Depending on the shape of the yield curve, the company has to plan for additional resources either through RSL or at fixed interest rate. This requires forecasting of interest rates in the future. If the future interest rates are expected to be harmful to the company, then the company has to use some hedging instruments. Though hedging instruments are not available at this point, there is positive news on their introduction in the Indian market. While the National Stock Exchange along with SEBI is working out to introduce equity derivative produces, the RBI is keen to bring interest rate derivatives in India. An unchecked 'gap' will ultimately lead to a crisis if it is not corrected in its early stage.

3) **Managing Due-diligence Risk**

The professional efficiency and ethics followed by the firm determine this source of risk. Since the financial services firm is giving a certification to either the regulating agencies or its client on the completion of required formalities, they are expected to perform efficiently with high ethical standards. This source of risk is relevant in the Indian context as several firms lack both on the efficiency and ethics. In the early face of capital markets reforms immediately after the economic liberalisation, there was a stock market boom and many financial services firms have used this boom to bring all sorts of issues to public and manipulated the market prices to get the subscription. In this process, the primary market has now become virtually non-existent in India. The due-diligence risk affects the firm in the form of suspension or cancellation of certification.

This risk could be managed by bringing in more professionals and creating right environment within the organisation. In fact, the regulating agencies look into this aspect before issuing certification. Another important aspect is to develop a code of conduct that employees have to follow in discharging the professional duties. In addition, it may be necessary to design appropriate internal control system so that important areas are investigated by another officer before issuing due-diligence certification. The professional training to the staff to improve their knowledge and share experience with other peers in the industry would be useful.

4) **Managing Interest Rate Risk**

Interest Rates in the economy play a major role in the financial markets. In fact, it integrates different segments of financial markets like stock market, money market, foreign exchange market, etc. For example, if the central bank increases the interest rates in order to contain excessive volatility in the foreign exchange market and stabilise Rupee, the treasury security prices decline in the money market. The firms in the financial services industry some time take up the interest rate risk of their clients by doing interest rate derivative transaction with their clients. Since this type of risk is unavoidable and some time voluntarily taken, they have to be managed.

There are two steps involved in the management of interest rate risk. First, the firm has to quantify the interest rate risk. The quantification is to be done for each asset and liability and the methodology depends on the nature of the underlying asset or liability exposed to the interest rate risk. For instance, if the firm has investments in securities, the 'duration' measure will be useful. Similarly, in asset-liability management, we have discussed the methodology for quantifying the interest rate risk of our borrowings. The other factors like existence of call and put option, conversion option, etc., need to be considered in evaluating the interest rate risk.

After the quantification of the risk, the second step would be to select appropriate instrument to manage the interest rate risk. There are two basic tools available for this purpose. The firm may buy or sell interest rate futures or arrange a interest-rate SWAP transaction. Before taking hedging, it would be useful to research the likely

movement of interest rates in the short-run and long-run. If the interest rate forecast is favourable for certain assets or liabilities the firm is holding, there is no need to hedge to that extent since hedging has a cost. It is also necessary to identify the net interest rate risk exposure when the firm deals with interest rate risk products with their clients since a good part of the risk might have been automatically hedged within the firm.

Example 3

Suppose you have done a interest-rate swap transaction with ABC Ltd and exchanged floating rate for fixed rate liability. If you have done another interest rate swap transaction for the 80% of the value of the previous transaction with another client but this time you have exchanged fixed rate for floating rate, then 80% of the interest rate risk is automatically hedged. The hedging if at all required has to be done for the balance 20%.

5) **Managing Market Risk**

This is the minimum risk that investors in the market are exposed. The unsystematic part of the risk could be reduced though diversification. Firms which are investing in the securities have to manage the market risk. There are several ways through which the market risk is managed. Some firms take a view on the market and switch over the funds from one market to another in order to minimise the risk. For example, a mutual fund may shift a significant part of their investment from stock market to debt market if they expect the economy will under-perform this year. Firms could also use derivatives to hedge their risk. For example, the mutual fund may buy put option on some indices or stocks in the periods of uncertainty. While this is known as portfolio insurance, another related method is dynamic hedging using index futures or options. In dynamic hedging, the fund manager takes risk over a period of time along with the market movements. This is achieved by increasing the hedging quantity when the market is moving downward and reducing the hedging quantity when the market is in the uptrend.

6) **Managing Currency Risk**

Firms dealing in foreign exchange are exposed to currency risk. Banks and money changers hold either foreign currencies or positions in foreign currencies. This source of risk affects others also when they deal with foreign exchange either as a borrower or as an investor. As discussed earlier, the exchange risk arises mainly when the demand and supply for the foreign currency changes. In managing this risk, the first step is to determine the amount of uncovered positions and then forecast the future direction in the currency in which the firm has open position. After determining the total value of open position which are likely to affect the firm when the currency moves in unfavourable direction, the firm has to select appropriate hedging instrument. It could cover the open position by liquidating the holding or take position in the forward or futures or options market depending on the risk perception and cost of hedge.

Activity 4

a) Name a few instruments which could be classified under RSA/RSL.

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b) How do you manage the unsystematic risk of stocks in investment activities ?

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c) When you see a credit rating, what do you infer from it ?

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4.6 SUMMARY

Financial services industry has grown rapidly since the economic and financial sector liberalisation was initiated in 1991. The services offered by them could be broadly classified into fund based services and non-fund based services. The firms deal with financial claims and risk associated with the financial claims. The industry has developed a number of products like futures, options, swaps, etc., that enable the users to transfer the financial claims and risk to others who are willing to invest in them. The mutual fund industry helps the investors to reduce the firm-specific risk called as unsystematic risk through diversification. In the process of dealing with financial claims and the risk associated with them, the industry is also exposed to several sources of risk. While some of them arises from external sources, others generate within the firm. The risk in financial services could be broadly classified into six types namely, credit risk, asset-liability gap risk, due-diligence risk, interest rate risk, market risk and currency risk. The credit risk and asset-liability gap risk arise when the financial service firms offer fund based services. Firms offering merchant banking and other services are exposed to due-diligence risk. The interest rate and market risks applies to firms which are investing in securities. Firms dealing with foreign currencies are exposed to currency or exchange rate risk.

Financial services firms have to manage the risk. While risk arising from internal sources could be managed by improving the efficiency of the organisation and introducing professionalism and training, external sources require special products. The risk management process involves the quantification of risk, its impact on the firm and assessment of alternative methods and products available to manage the risk. The products like forward, futures, options and swaps would be useful to manage different types of risk.

Table 1 : Assets and Liabilities

Liabilities	Rs. in Cr.	Assets	Rs. in Cr.
Owned Funds	100	Loans	700
Debt 900		Investments	300
Total	1000	Total	1000

Assets = Liabilities : Always Matched Automatically

Table 2 : Assets and Liabilities
(Matching/Mismatching in terms of maturity)

Liabilities			Assets		
Owned Funds		100	Loans:	Long - Term	600
				Short - Term	100
Debt :	Long - Term	400	Investments		300
	Short - Term	500			
	Total	1000		Total	1000

Long-term Loan (600) = Long-term Debt (400) + Owned funds (100) + Short-term Debt (100)

Mismatching : Short-term funds are used to fund the long-term loan.

Table 3 : Assets and Liabilities
(Matching/Mismatching in terms of maturity and risk sensitiveness)

Liabilities		Assets	
Owned Funds	100	Long - Term Loans	
		• Fixed	400
		• Floating	200
			600
		Short - Term Loans	
		• Fixed	50
		• Floating	50
			100
Long - Term Debt	Investments	300	
• Fixed	150		
• Floating	250		
	400		
Short - Term			
• Fixed	400		
• Floating	100		
	500		
Total	1000	Total	1000

Long-term Loan (600) = Long-term Debt (400) + Owned funds (100) + Short-term Debt (100)

Long-term Fixed Loan (400) = Long-term Fixed Debt (150) + Owned funds (100) + Long-term Floating Debt (150)

Mismatching : 1. Short-term debt is used to create long-term assets (loans) to an extent of Rs.100 cr.

2. Long-term floating rate debt is used to create long-term fixed rate assets (loans) to an extent of Rs.150 cr.

Table 4 : Assets and Liabilities

Decomposing, Matching, Bundling & Spotting Mismatching in A & L

Liabilities		Assets	
MATCHED PARTS		12% Loan (Time to Maturity : 6 years)	100
7% Bond (Time to Maturity : 6 years)	100		
Prime Rate + 2% Floating Bond (Time to Mat. 5 yrs.)	100	Prime Rate + 2% Floating Bond (Time to Mat. 5 yrs)	100
10% - 6 months Certificate of Deposits	50	14% Busy Season O/D	50
12% - 3 months Certificate of Deposits	150	Treasury Bill (YTM -14 %) (Investments) - 3 months	150
Owned Funds	100	14% Corporate Debentures (Time : 10 years)	100
	500		500
UNMATCHED PARTS			
Prime Rate + 2% Floating Time : 3 months	100	14% Loan Time : 6 years	200
13% Certificate of Deposit Time : 6 months	200	15% Loan Time : 8 years	100
9% Bond Time : 3 years	50	Prime Rate + 5% Floating Loan; Time : 3 years	100
Prime + 3% Bond Time : 5 years	150	Prime Rate + 3% Floating Loan (Time : 2 years)	50
		Treasury Bill (YTM:13%) Time : 56 days	50
	500		500
Total	1000	Total	1000

Mismatching exists to an extent of Rs. 500 cr. An analysis of mismatching shows that liabilities maturing within one year are to an extent of Rs. 300 cr. whereas the bank has short term asset only to an extent of Rs. 100 cr. Against a long-term assets (loans) of Rs. 300 cr., the bank has medium term liabilities of Rs.200 cr. While both the long-term assets (loans) are fixed rate, a significant part of the medium-term liabilities (Rs.150 cr.) is floating rate.

4.7 KEY WORDS

Fund-based Services: Financial services firms that cater the short-term and long-term needs of funds of corporate sector and others are in the fund-based services. Examples of fund-based services are commercial banking, term-lending, bill discounting, factoring and forfaiting, venture capital, underwriting, leasing and hire purchase, etc.

Fee-based Services: Financial services firms that enable the corporate sector and others to raise capital from the market and manage or transfer their risk to other participants of the market are in fee-based services. They provide these services

against a fee. Example of fee-based services are merchant banking, broking service, credit rating, mutual funds, portfolio management services, etc.

Moral Hazard: Moral hazard is the tendency of an insured to take greater risk because she/he is insured.

Adverse Selection: Adverse selection is the tendency of insuring the low quality asset and not insuring high quality assets.

Credit Risk: The chances of the borrower defaulting the interest and/or principal. Financial services firms offering fund-based services are exposed to credit risk.

Due-diligence Risk: The chances of regulatory action when the financial services firm failed to properly check the compliance of various regulatory requirements by the issuer of capital and adequacy of the disclosure of information to public at the time of public/rights issue. The lead manager has to be very cautious before issuing the due-diligence certificate.

Asset-Liability Gap Risk: When firms offering fund based services raise capital through different instruments having different maturity and interest terms and lend or invest in different forms, there is bound to be a mismatch in terms of future interest liability structure and maturity. The gap between the assets-liabilities on these accounts and the chances of firms failing to meet their obligation in the future is asset-liability gap risk.

Interest Rate Risk: Risk arising out of changes in the market interest rate. It affects the financial services firms which have issued securities as well as others which have invested in securities. Changes in interest rates also affect other segments of the financial markets.

Duration: It is a statistical measure that determines the sensitiveness of the security's market price when there is a change in the market interest rate. The variables that determine the duration are coupon rate, current market price and YTM and time to maturity.

Market Risk: The risk that affects all the securities in the market and thus cannot be eliminated through diversification. The changes in the macro-economic factors are the major source of market risk. This is also known as *systematic risk*.

Unsystematic Risk: The risk that are specific to a firm and its securities is unsystematic risk and could be reduced to a negligible level through diversification.

Currency Risk: The risk that arises out of changes in currency values. Financial services firms that hold foreign currency assets or liabilities are affected by this risk.

RSA: Rate-sensitive assets (RSA) are those financial instruments whose value changes when there is a change in the market interest rates.

RSL: Rate-sensitive liabilities (RSL) are those liabilities which cause change in the future cash flows from the firm when there is a change in the market interest rates.

Credit Rating: It is an unfettered publication of opinion on credit and market risk associated with an instrument or the firm that raises capital from the market by the credit rating service companies.

Interest Rate Derivatives: A variety of financial instruments that enable the buyer to hedge interest rate risk. Most popular interest rate derivative products are interest rate futures, interest-rate options and interest rate swap.

Index Futures: A standardised forward instrument that allows the participants to buy and sell the underlying index.

Options: An instrument that gives a right to buy or sell a financial instrument at predetermined terms in the future. Options are available on variety of financial assets.

Currency Swaps: An agreement between two parties to exchange principal and interest liability of different currencies.

Portfolio Insurance: Fund managers of mutual funds can insure the portfolio against market decline by using index futures or index options.

Dynamic Hedging: It is the process through which hedging is done in stages. This will allow the fund managers to have larger hedge when the market is declining and smaller hedge when the market is moving upward.

4.8 SELF ASSESSMENT QUESTIONS

1) List out the internal and external sources of risk affecting the merchant banking and stock broking services.
2) What is *moral hazard* and *adverse selection* and how they affect insurance companies?
3) Explain the services of credit rating that helps the financial services firms to reduce different types of risk?
4) Develop a risk-management system that will help financial services firms that open a variety of services and are also investing in securities.
5) How do you measure the *gap* in matching the Asset-Liability of a firm offering fund-based services? How to manage the risk arising out of this gap?
6) Suggest a suitable system for the banks and others offering fund-based services to manage their credit risk.
7) Collect the details of MS Shoes public issue failure. Why SEBI took action against the lead managers of the issue?
8) Name a few interest-rate derivative products. What are their uses in managing the interest rate risk?
9) What is portfolio insurance? How will it be useful to mutual funds in managing their market risk?
10) As an investment banker, you have done a currency swap transaction with one of your clients and taken the dollar commitment of your client for Rupee. How will you manage your Dollar exposure? What other factors will you consider before hedging your Dollar exposure?

Answers to Activities

Activity 1

a) Financial Services firms that offer credit cards first assess the credit worthiness of individuals who apply for credit cards and enable them to make purchases on credit. It also buys the receivables of the business units where the credit card holders availed credit. Thus credit-risk assessment and dealing in risky financial receivables are the basic services of credit card services. The credit card providers have also, started securitising the receivables and sell it in the financial markets and thus trade the credit-risk of individuals.
b) The list includes commercial banks, financial institutions, venture capital institutions, bill discounting, factoring and forfaiting services, leasing and hire purchase companies, credit card providers and insurance companies providing direct finance.
c) The problem of 'moral hazard' can be overcome to some extent by inserting conditions for maintenance of assets. The 'adverse selection' problem could be avoided through careful evaluation of proposals and inspection of the assets.

d) There is a mushrooms growth in the NBFCs in the last few years and these institutions promise very high return which many of them are not able to pay when the interest and principal become due. The failure of CRB capital which was once a leading company in this sector forced the regulators to look into the functioning of these NBFCs. The result was strict regulation in accepting the deposits from public.

e) The stock market during the last few years showed poor to negative return and this is reflected in the performance of mutual funds. Further, there was also considerable shift in the interest of investments and today, only a few stocks in the market perform well whereas in large number of remaining stocks, there is no trading. Mutual funds which have invested in these second-line stocks when the market was in boom were not in a position to sell them and revise their portfolio. This has also contributed to their poor performance.

Activity 2

a) Though there is no default risk in Government securities, the long-term Government securities are exposed to interest rate risk. When market interest rate changes, the value of the portfolio of securities held by the bank changes. This interest rate sensitiveness is known as interest rate risk and is measured in terms of *duration* of the securities.

b) This is the major problem faced by the investors and brokers in the Indian capital market. When a trade is completed in the exchange, there is no guarantee for good delivery of stocks. Some of the major problems connected with physical delivery are fake certificates, incomplete transfer-deeds, incorrect signature, etc. In fact, this is the major reason for not introducing trade guarantee by the exchanges in India. The risk of bad delivery could be avoided by encouraging the clients to become members of depository and deal in depository mode.

c) Credit rating is the major problem faced by the lease and hire purchase companies. As they are mainly meeting the requirement of medium and small firm, they find it difficult in assessing the credit risk. They rely on accounting statements of the firms but they conceal more than what they reveal. The absence of credit rating agencies specializing in medium and small firms adds to this problem of assessing credit risk.

d) No. Merchant bankers are not certifying that the project is a profitable one. They are liable only when the firm failed to disclose certain material information to the investors at the time of public issue.

Activity 3

a) The floating rates notes are least affected by the changes in the market interest rates. As their interest rates are also adjusted, there will not be any change in their values. On the other hand, fixed-rate bonds of long-term maturity are affected most when the market interest rate changes.

b) The depreciation in the Rupee will affect the bank depending on the position the bank holds in the foreign exchange market. If the bank has completely hedged their open positions, the changes in Rupee-other foreign currencies will not affect them. If the bank is short in a foreign currency and has not hedged, the Rupee depreciation will affect the bank adversely. On the other hand, if the bank is long in a foreign currency, the Rupee depreciation will favourably affect the bank.

Activity 4

a) All fixed income securities with different maturity periods and zero-coupon or Deep Discount bonds are *Risk Sensitive Liabilities* (RSL) to the issuers. Similarly, fixed income lending and leasing are *Risk Sensitive Assets* (RSA) to lenders.

b) The unsystematic risk could be eliminated through diversification. While there are different methods available in creating diversified portfolio, Markowitz diversification methodology will be the most useful method in portfolio construction to eliminate the unsystematic risk.

c) The credit rating service providers give an unbiased opinion on the ability of the company to meet the interest and principal liabilities in their current borrowing programme from the known information that available today. Thus one cannot stop with taking credit decision on the basis of current credit rating. It is equally important to continuously monitor the credit rating changes.

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